

Appl. No. 10/708,401
Andt. dated March 21, 2005
Reply to Office action of December 28, 2004

Amendments to the Specification

In paragraph [0019]:

[0019] Please refer to Fig.5. Fig.5 is a flow chart illustrating the method for detecting an unbalanced disc according to the present invention. The CD drive 10 controls the pick-up head 12 via a coil, and the vibration of the CD drive 10 leads to a resonance of the coil. If the vibration frequency of the coil is less than the first resonance frequency, the vibration ~~breadth~~ amplitude of the pick-up head 12 will augment increase as the vibration frequency of the coil increases. Since the pick-up head 12 is a part of the CD drive 10, the vibration ~~breadth~~ amplitude of the CD drive 10 is proportional to that of the pick-up head 12. While the vibration frequency of the coil equals the first resonance frequency, the vibration ~~breadth~~ amplitude of the pick-up head 12 will reach to its maximum. Nevertheless, while the vibration frequency of the coil exceeds the first resonance frequency, the vibration ~~breadth~~ amplitude of the pick-up head 12 will ~~diminish decrease~~ as the vibration frequency of the coil increases. Presently, the vibration ~~breadth~~ amplitude of the CD drive 10 can be maintained in a steady state within ~~in~~ a certain frequency range. Normally, the first resonance frequency of the coil is ~~locates~~ located in this range where the vibration ~~breadth~~ amplitude of the CD drive 10 remains steady. ~~On the basis of this character, As a result,~~, the CD drive 10 reads the optical disc 20 at a frequency which approximates the first resonance frequency of the coil. In such case, the CE signal of an unbalanced disc is obviously larger than that of a normal disc.

In paragraph [0028]:

[0028] An illustrative example is listed as follows to show how to detect an unbalanced

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disc according to the present invention. Assume the vibration ~~breadth~~ amplitude of the CD drive 10 can be maintained between 20Hz and 150Hz while the vibration frequency increases, and the first resonance frequency of the coil of the pickup head 12 is approximately 40Hz. While the rotary speed of the motor of the CD drive 10 reaches 5 2400 rpm, the vibration frequency of the CD drive 10 will become approximately the first resonance frequency of the coil. In such case, since the rotary speed of the motor is not very high, the CD drive 10 is able to determine if the optical disc 20 is an unbalanced disc or not according to the voltage value of the CE signal V_{pp}. Substantially, the CE signal of a normal disc is 400mv, while the CE signal of an unbalanced disc reaches 1500mv in 10 most cases. Once the optical disc 20 is marked as an unbalanced disc, a different method is adopted to read the optical disc 20 so as to improve the efficiency of the CD drive 20. It is to be noted that the CE signal is selected, instead of the TE signal, because the error range of CE signal is much greater than that of TE signal.